

MEMORANDUM

To: Members of the Coalbed Natural Gas Task Force

From: State Engineer's Office – Ground Water Division

Re: Impacts to Domestic and Stock Wells from Coalbed Natural Gas Production and Available Regulatory Remedies

Date: October 31, 2006

BACKGROUND

What impacts to the ground water resource are we observing from co-production of water with coal bed natural gas (CBNG)? Declines in water levels in domestic and stock wells, as well as gas production in wells with declining water levels, have been reported. The Wyoming State Engineer's Office – Ground Water Division responds to complaints of alleged CBNG impacts on domestic/stock wells. Sometimes these complaints can be resolved; sometimes they are civil issues between parties. However, the statutes provide that the SEO can investigate the issue and seek resolution. The challenge is that not all interference complaints can be easily or quickly proven, and simple drops in water levels do not rise to the statutory definition of an injury.

INTERFERENCE

W.S. §41-3-911 provides the statutory framework for interference:

41-3-911. Authority to order interfering appropriator to cease withdrawals of water: hearing complaints by appropriators.

*(a) Whenever a well withdrawing water for beneficial purposes shall **interfere unreasonably** with an **adequate well** developed solely for domestic or stock uses as defined in W.S. 41-3-907, whether in a control area or not, the state engineer may, on complaint of the operator of the stock or domestic well, order the interfering appropriator to cease or reduce withdrawals of underground water, **unless such appropriator shall furnish at his own expense, sufficient water at the former place of use to meet the need for domestic or stock use.** In case of interference between two (2) wells utilizing water for stock or domestic use as defined in W.S. 41-3-907, the appropriation with the earliest priority shall have the better right.*

(b) Any appropriator of either surface or underground water may file a written complaint alleging interference with his water right by a junior right. Complaints are to be filed with the state engineer and are to be accompanied by a fee of one hundred

dollars (\$100.00) to help defray costs of investigation. This section is not applicable to interference between two (2) surface water rights. Upon receiving the complaint and fee, the state engineer shall undertake an investigation to determine if the alleged interference does exist. Following the investigation, the state engineer shall issue a report to all interested parties stating his findings. The report may suggest various means of stopping, rectifying or ameliorating the interference or damage caused thereby.

(c) Any interested appropriator who is dissatisfied with the results of the foregoing procedure may proceed under the applicable provisions of the Wyoming Administrative Procedure Act [16-3-101 through 16-3-115]. If a hearing is to be held, it shall be held before the appropriate water division superintendent. The superintendent shall report to the board of control at its next meeting. The board shall issue its order to include findings of fact and conclusions of law.

The statute provides an enforceable legal remedy for surface or groundwater appropriators whose rights are impaired by junior appropriators. Under the statute, a person alleging interference must file his complaint with the State Engineer. The fee for filing a complaint is \$100 “to help defray the costs of the investigation”.

In the case of a groundwater appropriator claiming interference, it is prerequisite that:

- 1) the appropriator must have a **valid water right**,
- 2) the appropriator must have an **adequate well**, and
- 3) “**unreasonable**” interference must occur.

Valid Water Right

To claim interference under §41-3-911, the claimant must have a valid water right from the State Engineer’s Office. Without a valid water right, the claimant has no standing.

Adequate Well

Existing statutes and rules provide no definition for “adequate well”. It has been the SEO’s policy that an “adequate” well fully penetrates the aquifer or is at least drilled to a depth similar to the interfering appropriator’s well.

The adequacy of a well also includes evaluation of the functionality of the well which can include the integrity of the casing and appurtenant piping, whether or not screens or perforations have been encrusted or corroded shut, whether the well has sanded in, if electrical components are functioning properly, if the well was completed with large enough casing that will accommodate a pump if the well quits flowing under artesian pressure, etc.

In any claim of interference, the initial onus is on the well owner to prove his well is an “adequate” well before the SEO will proceed with a formal interference investigation.

Unreasonable Interference

It is important to remember that the right of the appropriator does not include the right to have the water level or artesian pressure at the appropriator's point of diversion (i.e., the well) maintained at any level or pressure higher than that required for maximum beneficial use of the water in the source of supply (W.S. §41-3-933).

Existing Wyoming statutes and rules do not provide a definition for "unreasonable interference". However,

"...most prior appropriation states have statutes rejecting the idea that senior ground water appropriators are absolutely protected in their historical diversion methods. Although statutes vary, they typically provide that priority in time either does not protect an appropriator against reasonable lowering of static water level, or protects an appropriator only in the maintenance of a reasonable pumping lift. These statutes give little specific guidance on what is a "reasonable" water level or pumping lift, but an important theme – explicit in some statutes and likely implicit in others – is tension between two economic considerations. One is concern about protecting senior appropriators against water level decline that drops below what the Bender court, supra Note 1, called their "economic reach". The other is concern that full economic development should not be blocked by burdening new appropriators with liability for the increased withdrawal costs of existing appropriators" (Douglas L. Grant, Reasonable Groundwater Pumping Levels Under the Appropriation Doctrine: The Law and Underlying Economic Goals, 21 Nat. Resources J. 53 (1983)¹.

Investigation

Upon receiving a complaint of interference and the filing fee of \$100, the SEO will undertake an investigation to determine if the alleged interference exists. The SEO will then issue a report to all interested parties stating the findings of the investigation. The report may suggest various means of stopping, rectifying, or ameliorating the interference or damage caused. If the appropriator is dissatisfied with the results of the investigation, he can invoke the Administrative Procedures Act and request a hearing in front of the Water Division Superintendent.

The SEO attempts to resolve most claims of interference on an informal basis (i.e., without having the appropriator file the \$100 fee) after an initial investigation by the SEO. To date, the majority of claims of interference can be attributed to other variables (e.g., poor construction, deterioration of the well, mechanical problems with the pump, the possible effects of a 6-7 year drought, etc.), not interference from a junior appropriator.

¹ Current Creek Irrigation Co. v. Andrews, Supreme Court of Utah, 1959. 9 Utah 2d 324, 344 P.2d. 528.

REGULATORY OPTIONS

Enforcement of water law by the SEO is limited to what is provided by Wyoming Statute.

The State Engineer does not enter into situations where the use of ground water resources is to be regulated lightly, and a thorough evaluation of all of the potential contributing factors must be undertaken before any order of the State Engineer is issued.

Regulation of ground water is different than regulation of surface water, primarily because of differences in the physical occurrence of the two resources.

1. Ground water is hidden from sight – the physical characteristics of an aquifer are not visible and the effects of pumping cannot easily be observed.
2. Ground water available for use in most aquifers consists of both annual recharge and water that has accumulated over time and is available in storage. Quantification of the volume of ground water available in storage for use is a difficult, if not impossible, task.
3. To put ground water to beneficial use, an appropriator usually has to drill a well and install a pump. The expense associated with using ground water varies directly with the depth at which ground water is available.
4. Ground water flows much more slowly than surface water. It typically takes much longer for ground water pumping to adversely affect other users from the source of supply than for a surface stream diversion to affect downstream users. Similarly, when interference is occurring, closure of the interfering well typically takes much longer to restore the supply to other users than closure of a surface stream diversion. Time lag complicates ground water management.²

Interference “Light” Statute

In cases where there is unreasonable interference to an adequate domestic or stock well, the State Engineer has the authority to order the interfering junior appropriator to “*cease or reduce withdrawals of underground water, unless such appropriator shall furnish at his own expense, sufficient water at the former place of use to meet the need for domestic or stock use.*”

The order can be issued without the burden of the senior appropriator having to file a formal complaint of interference. Once again, the initial onus of proving the well is “adequate” will fall upon the appropriator who claims interference or impact. The appropriator must also have a valid water right to have standing in order to claim unreasonable interference. Determination of whether or not the appropriator has experienced “unreasonable interference” is the responsibility of the State Engineer.

This provision helps the appropriator who has an adequate domestic or stock well and has experienced a 200-foot decline in water levels due to nearby CBNG development. It

² Source: James W. Crosby, A Layman’s Guide to Groundwater Hydrology, Charles E. Corker, Groundwater Law, Management and Administration, National Water Commission, Legal Study No. 6, Chapter II, 38-45, 65, 68-70 (1971).

does not help the appropriator with an 800-foot deep, 2-inch diameter, artesian well that no longer flows but still has water available in the casing. It also does not help the appropriator with a priority date junior to the CBNG permits; nor the appropriator who completed his well in a 10-foot thick coal seam and only had a minimum level of water available in his well since the time it was constructed, or any other appropriator relying on an “inadequate” well.

Conditions and Limitations

The State Engineer has the authority to attach additional “Conditions and Limitations” to a water right permit. Typically, these conditions and limitations dictate the geologic formation in which the well must be completed, how the well must be constructed, the placement of the seal, reporting requirements, etc.

The State Engineer could attach a condition on all new CBNG permits that would require the CBNG developer to replace any senior well impacted to some defined degree by CBNG/water production activities. However, to do so would be to pre-judge the question of interference and partially eliminate an avenue of investigation as authorized in W.S. §41-3-911.

Another approach that could be considered by the CBNG Task Force and the SEO is to require for all new CBNG well permits, a condition requiring a Water Well Agreement with all existing wells within a certain radius of the new CBNG well.

Water Well Agreements

It has been previously suggested that the SEO be responsible for the development of water well agreements between appropriators of ground water for domestic and stock use and CBNG developers. The SEO does not have the statutory authority to establish, or be signatory to, extensive water well agreements between well owners and CBNG companies. Furthermore, the SEO does not have statutory authority to arbitrate disputes between private parties – in fact, participation on an arbitration board could prejudice the SEO in fulfilling its statutory duties.

A level of protection is currently provided by the U.S.D.I. - Bureau of Land Management which allows for a water well agreement in the *Powder River Basin Oil and Gas Project Record of Decision and Resource Management Plan Amendments (April 2003)*, which states:

“All operators on federal minerals are required to offer a Water Well Agreement as set forth in the Gillette South FEIS and the Wyodak FEIW. This agreement protects nearby water wells permitted by Wyoming State Engineer’s Office (WSEO). The Companies generally offer the same agreement when they are drilling on fee and state lands” (AppendixB - copy attached).

CONCLUSION

To implement the remedies suggested by creation of additional Conditions and Limitations or SEO involvement in requiring Water Well Agreements would require the SEO to operate by exercising authority arguably beyond that which has been granted by the Legislature.

The authority may be “arguable” in that W.S. §41-3-909 authorizes and empowers the State Engineer to prescribe such rules and regulations as may be necessary to enable him to administer this act:

41-3-909. State engineer; powers generally.

(a) In the administration and enforcement of this act [41-3-901 through 41-3-938] and in the effectuation of the policy of the state to conserve its underground water resources, the state engineer is authorized and empowered on advice and consent of the board of control:

(i) To prescribe such rules and regulations as may be necessary or desirable to enable him to efficiently administer this act;

The act addresses both the interference statute (W.S. §41-3-911) and the ability of the State Engineer to prescribe rules and regulations as necessary (W.S. §41-3-909). The ability to attach additional limitations to a permit are addressed in the State Engineer’s Office Regulations and Instructions, Part II, Ground Water, Chapter II, Section 2(d):

“The permittee should read and understand all limitations on the approved permit. Besides the standard limitations printed on the permit and inherent under the law, additional limitations deemed necessary by the State Engineer may be added prior to approval of the permit.”